

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/060,586 04/15/98 CAVALIERLI

E P01804US1

HM22/0401

HEIDI SEASE NEBEL
ZARLEY MCKEE THOMTE VOORHEES & SEASE
801 GRAND
SUITE 3200
DES MOINES IA 50309-2721

EXAMINER

DAVIS, M

ART UNIT

PAPER NUMBER

1642

DATE MAILED:

04/01/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks



HM22 / 0401

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TITLE OF INVENTION SYNTHESIS OF ESTROGEN-PURINE BASE AND ESTROGEN-FLUORESCENT PROBE AND DEVELOPMENT OF FLUORESCENT PROBES AND MONOCLONAL ANTIBODIES TO ASSAY THOSE ADDUCTS.

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.**

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

- I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your
current SMALL ENTITY status:**

If the SMALL ENTITY is shown as NO:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or**
B. If the status is the same, pay the FEE DUE shown above.

- A. Pay FEE DUE shown above, or**

- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.**

- II. Part B-Issue Fee Transmittal** should be completed and returned to the Patent and Trademark Office (PTO) with your **ISSUE FEE**. Even if the **ISSUE FEE** has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the **ISSUE FEE** to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

- III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY.

Notice of Allowability

Application No.

09/060,586

Applicant(s)

Cavalierli et al.

Examiner

Minh-Tam Davis

Group Art Unit

1806



All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to interviews on Mar 2, 8, 1999

☒ The allowed claim(s) is/are 32-35, renumbered as 1-4

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☐ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.

☐ including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. _____

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 1

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Interview Summary, PTO-413

☒ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☒ Examiner's Statement of Reasons for Allowance

Art Unit: 1642

EXAMINER'S AMENDMENT

Effective February 7, 1998, the Group Art Unit location has been changed, and the examiner of the application has been changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Minh-Tam Davis, Group Art Unit 1642.

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Heidi Neble on March 2, 8, 12, 1999.

2. The application has been amended as follows:

In the claims:

B₁
Claim ~~32~~ (Amended). A method of concentrating and purifying an adduct of an estrogen and a purine [estrogen-nucleoside and estrogen-mercapturate adducts] isolated from biological sources, wherein the adduct is selected from the group consisting of 7[4-hydroxyestron-1(α,β)-yl]guanine, 7[4-hydroxyestradiol-1(α,β)-yl]guanine, N²[2-hydroxyestron-6-yl]deoxyguanosine, N²[2-hydroxyestradiol-6-yl]deoxyguanosine, N⁶[2-hydroxyestron-6-yl]deoxyadenosine, and N⁶[2-hydroxyestradiol-6-yl]deoxyadenosine, comprising:

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covalently coupling anti-adduct antibodies, which selectively bind to said adducts of an estrogen and a purine, to a solid matrix to form bound anti-adduct antibodies, wherein the matrix is derivatized with couplers selected from the group consisting of CNBr, N-hydroxysuccinimide, and hydrazide; [and

detecting the bound anti-adduct antibodies with polyclonal antibodies wherein the polyclonal antibodies are specific for the anti-adduct antibodies.]

*B1
concl'd*
applying a sample from the biological sources to the solid matrix-anti-adduct antibodies, so that said adducts of an estrogen and a purine bind selectively to the anti-adduct antibodies;
washing the solid matrix-anti-adduct antibodies, to which said adducts of an estrogen and a purine bind; and,
eluting the adducts.

3. The following is an examiner's statement of reasons for allowance:

The claimed method is novel because said method uses antibodies which specifically bind to novel estrogen-nucleoside and estrogen-mercapturate adducts. The claimed estrogen-nucleoside and estrogen-mercapturate adducts are the subject of US Patent 5,840,889. The antibodies to said adducts are novel because the claimed adducts and the adducts known in the art have different structure, and because it is well known that one of skill in the art could make antibodies that recognize specific structure of estrogens (see for example Fujii et al, 1985, Steroids, 46(4,5): 857-865), and nucleosides.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Tam B. Davis whose telephone number is (703) 305-2008. The examiner can normally be reached on Monday-Friday from 10:00 am to 2:00 pm, except on Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Hutzell, can be reached on (703) 308-4310. The fax phone number for this Group is (703) 308-4227.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Paula.Hutzell@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless **the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122.** This is more clearly set

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forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0916.

Minh-Tam B. Davis

March 19, 1999


PAULA K. HUTZELL
SUPERVISORY PATENT EXAMINER